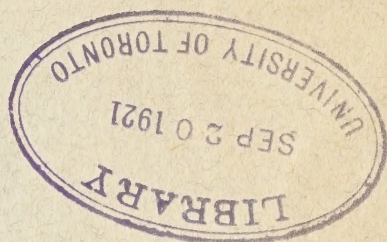


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NEW OIL FIELDS OF NORTHERN CANADA




By
F. H. KITTO

DEPARTMENT OF THE INTERIOR
CANADA

Hon. Sir JAMES A. LOUGHEED, K.C.M.G.,
Minister.

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NATURAL RESOURCES INTELLIGENCE BRANCH
F. C. C. Lynch, Superintendent.



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SECOND EDITION

Prepared under the direction of the Superintendent
Natural Resources Intelligence Branch

Department of the Interior, Canada

Hon. Sir James A. Loughheed, K.C.M.G.
Minister.

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Deputy Minister.

1921

NEW OIL FIELDS OF NORTHERN CANADA

General

1. The new oil fields of Northern Canada are located in the Provisional District of Mackenzie, one of the three districts constituting the Northwest Territories.

2. The territories are under the direct administration of a commissioner with head offices at Ottawa, i.e., W. W. Cory, C.M.G., who is also Deputy Minister of the Department of the Interior.

3. The natural resources of the territories (minerals, forests, game, etc.) are the property of the Crown and are controlled by the commissioner and the various Federal departments.

4. A local office for the Provisional District of Mackenzie, in charge of a Mining Recorder and Crown Timber and Land Agent, has been established at Fort Smith. This will replace the Edmonton office in so far as the Mackenzie District is concerned. Sub-offices will also be opened as required.

5. Applications for mineral claims (including prospecting permits for oil and gas), for timber permits and for land grants will be received at the Mackenzie office, or at a sub-office for transmission to this office.

6. The game is protected by the Northwest Game Act, which is administered by the Commissioner of Dominion Parks, Ottawa, and enforced by the officers of the Royal Canadian Mounted Police.

7. The fisheries of the district fall under the jurisdiction of the Fisheries branch of the Department of Marine.

8. Law and order are maintained by the Royal Canadian Mounted Police and resident justices of the peace. Detachments of the former are located at various points throughout the district.

Location and Area

1. The district of Mackenzie extends from latitude 60 degrees north (the northern boundary of Saskatchewan, Alberta and British Columbia) to the Arctic coast and from longitude 102 degrees west to the eastern boundary of Yukon territory.

2. The total area of the district is approximately 525,000 square miles.

3. Its outstanding physical features are Great Slave lake (over 10,000 square miles in extent), Great Bear lake (nearly 12,000 square miles), and Mackenzie river (nearly 1,500 miles in length, or with its principal tributary, the Peace, over 2,500 miles).

The new oil fields of Northern Canada are located in the Mackenzie District of the Northwest Territories.

Entry

1. The natural gateway to Mackenzie is at Fort Smith, on Slave river, at the crossing of the Alberta-Mackenzie boundary line.

2. The Royal Canadian Mounted Police are authorized to refuse right of entry to persons insufficiently equipped or physically unfit to withstand conditions in such northern and sparsely occupied areas, or for any other reasons deemed advisable.

Development and Occupation

1. The principal and practically the only industry heretofore carried on in this district is the fur trade.

2. Prospecting for oil has recently been conducted by the Imperial Oil Company at two points, viz., (1) at Windy point, on the northern shore of Great Slave lake, and (2) at a point on the right bank of Mackenzie river about forty-five miles below Norman.

3. The principal fur trading posts are located as follows:—

Fort Smith—on Slave river, in latitude 60 degrees north.

Resolution—on the south shore of Great Slave lake near the mouth of the Great Slave river.

Hay River—on the south shore of Great Slave lake at the mouth of Hay river.

Providence—on Mackenzie river below the lake.

Simpson—on Mackenzie river at the mouth of Liard river.

Wrigley—on Mackenzie river in about latitude 63° degrees north.

Norman—on Mackenzie river at the mouth of Great Bear river.

Good Hope—on Mackenzie river near the Arctic Circle.

Arctic Red River—on Mackenzie river at the mouth of Arctic Red river.

McPherson—on Peel river just above the Mackenzie delta.

Liard—on Liard river in the southwest corner of the district.

Rae—on the northwest arm of Great Slave lake.

Herschel—on Herschel island.

There are also a few posts along the Arctic coast and in the Mackenzie delta.

4. Detachments of the Royal Canadian Mounted Police are found at Fitzgerald (near Fort Smith), Resolution, Simpson, Norman, Herschel Island, McPherson, and Tree River (Coronation Gulf).

5. Anglican or Roman Catholic missions (in many cases both) are found at every post mentioned.

6. Hospitals are maintained by the Roman Catholic mission at Fort Smith and Simpson.

Norman Oil Strike

1. The Imperial Oil Company, during the summer of 1919, transported a drilling outfit into the Mackenzie district and set it up on the right bank of Mackenzie river, about 45 miles below Norman.

2. Norman lies about 900 miles in an airline northwest of Edmonton, or about double this distance by the ordinary routes of travel.

3. A drilling crew spent the winter of 1919-20 here and in the early spring of 1920 commenced drilling operations.

4. In July of 1920 a second drilling crew arrived to relieve the former crew. A geological party also worked during the summers in the neighbourhood.

5. During the summer of 1920 small flows of high-grade oil were reported as having been encountered at depths of approximately 200 and 400 feet respectively.

6. Toward the close of the season a gusher was said to have been struck at 800 feet. Press reports stated that the flow would amount to 1,000 or 1,500 barrels per day. Other reports are even more sensational. Concerning this strike the following statement was wired to the Natural Resources Intelligence Branch by Mr. Charles E. Taylor, of Edmonton, under whose direct administration the prospecting activities of the Imperial Oil Company are conducted in these fields: "Well is very encouraging and while somewhat over-rated by the press renders hope that prospecting of the area will result in sufficient production being obtained in a few years to warrant the development of some transportation scheme whereby the production can be utilized."

Oil Regulations

The following is a synopsis of the regulations in force in the Northwest Territories on June 15th, 1921:—

1. Claims in the Mackenzie District must be staked out on the ground (the land being unsurveyed) in accordance with instructions contained in the Regulations.

2. Applications for a prospecting permit on claims so staked must be made in person to the agent or to a sub-agent for transmission to the agent. The Applicant must present his Entry Certificate upon recording claims.

3. The maximum area of a permit is 2,560 acres, and the minimum is 80 acres. A permit is good for a term of 4 years only. Locations can be grouped subject to a maximum area of 20 square miles.

4. The rental of a permit is 50 cents per acre for the first year, and \$1.00 per acre for each subsequent year. The second or following year's rental is not required provided an adequate drilling outfit has been installed on the location or one location of a group.

5. A recording fee of \$5.00 together with the amount of the first year's rental, must accompany each application for permit.

6. Prospecting machinery and equipment are required to be placed on the ground within two years from date of permit, and boring operations to be prosecuted during the third year.

7. If oil in commercial quantities is struck a twenty-one year lease may be obtained for one-quarter of the area of the permit, subject to a yearly rental of \$1.00 per acre, and certain Royalties. The holder of the original permit shall have the first option of acquiring the remaining three-quarters should it be decided to dispose of same.

8. The permittee who has acquired one or more permits may consolidate his operations and expenditure, and the amount expended on drilling operations on one or more locations in the group may be applied on account of the rental of the whole of the locations in the consolidation.

9. Copies of the Regulations should be secured and their contents carefully noted by intending stakers.

Transportation

1. Three trading and transportation companies offer passenger and freight services during the season of navigation.

2. These companies are:—

Hudson's Bay Company.

Northern Trading Company, Limited.

Alberta and Arctic Transportation Company, Limited.

3. Edmonton is the logical outfitting point, with Fort Smith the point of entry to the district.

4. Between these points there is a choice of two routes, i.e., the Peace River route and the Athabaska route.

5. The Peace River route is as follows: Edmonton to Peace River via the Edmonton, Dunvegan and British Columbia railway, 312 miles, semi-weekly service, Pullman and dining cars. Peace River to Vermilion chutes by steamboat, 300 miles. Portage around chutes 4 miles, wagon road. Vermilion chutes to Fitzgerald by steamboat, 275 miles. A weekly service is maintained between Peace River and Fitzgerald by Alberta and Arctic Transportation Company, Limited. Fitzgerald to Fort Smith, portage 16 miles, wagon road.

6. Athabaska route is as follows: Edmonton to McMurray by the Alberta Great Waterways railway, 290 miles, last 16 miles of road not completed, service at present uncertain. McMurray to Fitzgerald by steamboat, 285 miles. The Hudson's Bay Company and the Northern Trading Company operate boats on this run and a weekly or more frequent service is maintained. Fitzgerald to Fort Smith, portage 16 miles, wagon road.

7. From Fort Smith there is uninterrupted navigation north and west following Slave river, Great Slave lake, and Mackenzie river to the Arctic coast. Boats on this run are: *The Mackenzie River*, Hudson's Bay Company; *The Distributor*, Alberta and Arctic Transportation Company, Limited; and *The Northland Trader*, Northern Trading Company. The usual schedule on this run has included one round trip to McPherson, a second trip to Norman, and a third trip, if required, to Hay River or Simpson.

8. Approximate mileages from Edmonton via the Peace River route are as follows:—

	Miles
Edmonton to Peace River (rail).....	312
Peace River to Vermilion chutes (steamer).....	300
Vermilion chutes portage.....	4
Vermilion chutes to Fitzgerald (steamer).....	275
Fitzgerald to Fort Smith (portage).....	16
Fort Smith to Resolution (steamer).....	195
Resolution to Hay River (steamer).....	70
Hay River to Providence (steamer).....	95
Providence to Simpson (steamer).....	165
Simpson to Wrigley (steamer).....	135
Wrigley to Norman (steamer).....	185
Norman to Good Hope (steamer).....	170
Good Hope to Arctic Red River (steamer).....	220
Arctic Red River to McPherson (steamer).....	65

9. Navigation on Peace, Athabaska, and Slave rivers commences about the middle of May and lasts until about the middle of October. The Mackenzie river run is restricted to a short season by ice on Great Slave lake. This lake seldom opens for navigation till about the first of July and some years until nearly the middle of July. Low water and early frosts shorten the fall season also. Below the lake the river is navigable about a month earlier.

10. The actual travelling time from Edmonton to McPherson at an average rate of 15 miles per hour would slightly exceed six days, and three times as long should be allowed for returning, making a total of about twenty-five days for the round trip. Owing to stops and delays, depending on freight movements, ice and weather conditions, etc., the round trip from Fort Smith to McPherson is usually given a spread of four weeks. Boats leave Fort Smith as soon as the ice in Great Slave lake is believed to be clear. As no means are available for receiving speedy reports from the lake or of sending notices to Edmonton, passengers must be on hand early and be prepared for unavoidable waits. A safe estimate of the time required for a round trip from Edmonton to Norman or McPherson would be six weeks to two months, leaving Edmonton about the middle of June.

11. A rough estimate of the cost of a trip into this district can be made from the following figures deduced from tariffs in effect in 1921:—

Railways.—Passenger and freight, Canadian Western rates.

Steamboats.—Passengers, going down-stream, 6 to 8 cents per mile; up-stream, 8 to 14 cents per mile; meals, \$1; berths, \$1. Through return fare including berth and meals while on board from McMurray to Norman, \$300; Fort Smith to Norman, round trip, \$200. Freight, down-stream, three-quarters of a cent and up per pound per hundred miles; up-stream, one cent and up per pound per hundred miles. For pieces of freight weighing 1,000 pounds or over add 50 per cent to these rates. Special rates on cattle, dogs, canoes, and machinery.

Fort Smith portage.—Passengers, \$3 each. Freight, 1½ cents per pound; canoes, \$5 each.

Portage end of steel Alberta Great Waterways Railway to McMurray.—Freight: winter, 1 cent per pound, summer, 2½ cents per pound.

These rates are approximate only and are subject to change.

12. For particulars of new rates, schedules, etc., for 1921 on these northern lines of travelling, application should be made as follows:—

- Passenger and Freight Agent,
Edmonton, Dunvegan and British Columbia Railway,
Edmonton, Alberta.
- Passenger and Freight Agent,
Alberta Great Waterways Railway,
Edmonton, Alberta.
- The District Manager,
Hudson's Bay Company,
Edmonton, Alberta.
- The Fur Trade Commissioner,
Hudson's Bay Company,
Winnipeg, Manitoba.
- The Transportation Manager,
Northern Trading Company, Limited,
Edmonton, Alberta.
- The Transportation Manager,
Alberta and Arctic Transportation Company, Limited,
Edmonton, Alberta.

Communications

1. Mail is taken into the interior by boat during the summer months and a limited quantity only by dog-team at monthly intervals during the winter. A weekly service as far as Fort Smith will probably be given from June first to the end of September.
2. Mails are scheduled to leave Edmonton about five times during the winter for points in the southern part of the district and twice for points as far north as McPherson.
3. There are no telegraph or wireless stations in Mackenzie district. The nearest wires are at McMurray and Peace River, Alberta.
4. The police make one winter patrol from Fort Smith to Simpson, one from Dawson to McPherson, and one from McPherson to Herschel Island.

Climate

1. The winters are long and cold but not severe, except in the Arctic regions.
2. The summers are short but warm and pleasant, with three months perpetual daylight, and an exceedingly rapid growth of all vegetation.
3. Precipitation is moderate. The snowfall seldom exceeds two feet except in the mountains. The rainfall is slightly more than in the Prairie Provinces.
4. Extremes of temperature as far north as Norman vary from about 85 degrees Fahr. in midsummer to 50 degrees below zero in midwinter.

Supplies Available

1. Heretofore the trading posts have carried only the necessary quantity and variety of food, clothing, and equipment to meet the needs of their own servants and the natives with whom they trade, leaving a very small margin for travellers.
2. Stocks are replenished only once a year, when the midsummer steamers arrive.
3. In the spring of 1920 there was a complete shortage for several weeks, before the boats arrived.

4. Stocks laid in for the present year are not sufficient to meet extra demands of any great extent.

5. Parties going north should either carry their own supplies or make arrangements with the Edmonton office of one of the various companies mentioned.

6. It is to be expected that these companies will endeavour to meet all increased demands on both their transport and trading divisions as early as possible, but this cannot be accomplished on short notice.

Accommodation

1. There are no hotels, road-houses, restaurants, or places offering public accommodation in Mackenzie district.

2. Parties should take their own tents, bedding, camp equipment, and provisions.

3. Good camping grounds with plenty of fresh water and wood for fuel are found everywhere, but great care should be taken with camp fires.

4. It is contrary to law to leave a camp fire unquenched, or to start a forest fire through any act of carelessness.

5. Game along the route of travel is exceedingly scarce and is protected by a rigid game Act. Severe penalties are imposed for hunting without permits, or for killing in contravention of the terms of this Act.

Winter Travel

1. Winter travel is entirely by dog train, and as there are no regular roads and but little traffic, this method of travelling is full of hardship.

2. Good sleigh dogs are scarce and high in price.

3. Dogs cannot travel far without food in excess of their carrying capacity. The supply of dog food throughout the Mackenzie is usually very limited.

4. Any attempt to enter the district during the winter without advance arrangements would be exceedingly hazardous and costly. It should only be attempted by well-organized parties with ample supply and equipment complete in every detail.

Small Boats

1. The interior of the Mackenzie district is easily reached by small boats, canoes, etc., as the route is all down-stream. The return voyage is long and tedious without power, and small motor-boats that permit of being easily portaged are therefore advisable.

2. Early arrangements should be made for shipping boats by rail from Edmonton to Peace river or to the end of steel about sixteen miles from McMurray.

3. Limited numbers of small boats may be secured from local builders at Peace river. Write the Board of Trade for information.

4. Small boats following the Peace River route must be portaged around or lined over the Vermilion rapids and chutes. Teams are likely to be scarce here.

The only other rapids on Peace river is the Jackfish rapids above Peace Point, which are not dangerous.

5. Boats destined for McMurray must be freighted overland from the end of steel to the water. A short haul to the Clearwater river can be made. The Clearwater joins the Athabaska at McMurray.

6. Boats taking the Athabaska route will find the mouth of this river shallow and the entrance to lake Athabaska very complex.

7. Athabaska lake should not be crossed without a guide, or in any case when the weather is uncertain.

8. The Peace and Athabaska routes merge into Slave river, on which dangerous rapids are found between Fitzgerald and Fort Smith.

9. Teams for freighting boats across the 16-mile portage here are fairly plentiful.
10. Slave rapids can only be run by very experienced men, and nothing but scows should be sent through.
11. Small boats and launches can take Sawmill Snye from Slave river to Great Slave lake, thus avoiding the shallow mouth and getting a more sheltered passage into Resolution.
12. Great Slave lake should be crossed only when the weather shows favourable signs.
13. Mackenzie river has an even, steady current except for the Sans Sault rapids and the Upper Ramparts, both below Norman, which are dangerous at certain stages of the water.
14. Head winds on these large rivers raise very heavy swells, which often make it advisable for small craft to put to shore.

Other Possible Routes

1. Leaving Peace river at Fort Vermilion, thence northwest 90 miles by wagon trail to Hay river (upper post), thence down Hay river, portaging around Alexander falls and reaching Great Slave lake at Hay River post.
2. Going up Peace river to Fort St. John, thence across country by pack trail to Nelson river, thence by boat to Liard river and down it to Fort Simpson. This route would enable one to reach Fort Simpson about a month earlier than via Great Slave lake, but it is difficult at present. Distances from Peace River are approximately: to Fort St. John, 180 miles; pack trail, 200 miles; Nelson river, 175 miles; Liard river, 190 miles; total, 745 miles.
3. From the Yukon by way of McMillan or Stewart river and descending the Gravel river, which joins the Mackenzie a short distance above Norman.
4. From Dawson to McPherson. The police patrol goes by way of Wind river and the summer route is via the Porcupine river. Both are long and difficult.
5. From Herschel island. Shallow draft vessels from the Arctic ascend the Mackenzie, but the open season is very short.
6. Routes, if necessary, could be established as indicated, as occasional travellers have followed them, but practically no improvements have ever been made on them.

Time to Set Out

1. There is nothing to be gained by entering this district earlier than June or July.
2. The extent of the oil fields will give all prospectors who are likely to enter for many years ample opportunity to acquire claims. According to the Mining Lands and Yukon Branch of the Department of Interior, the area disposed of under petroleum and natural gas leases, to July 1, 1921, in the Mackenzie river district, is 101,724 acres, or about 160 square miles, and in the Great Slave lake area 104,199 acres, equal to 163 square miles.
3. All parties contemplating going north are strongly advised to avoid haste and to keep posted on the situation.
4. Further information will be gladly supplied upon application to the

Superintendent,

Natural Resources Intelligence Branch,
Department of the Interior,
Ottawa.





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